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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,944	12/03/2002	James Rulon Young Rawson	RD-29491	8366
6147	7590	04/22/2004	EXAMINER	
GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 SCHENECTADY, NY 12301-0008			HOPKINS, ROBERT A	
			ART UNIT	PAPER NUMBER
			1724	

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,944

Applicant(s)

RAWSON, JAMES RULON
YOUNG

Examiner

Robert A Hopkins

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-12, 15 and 16 is/are rejected.
- 7) ☒ Claim(s) 5-7, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12-16-02.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4,8,9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kong(6216092).

Kong teaches a regeneration controller for a water softener comprising a water meter(31) configured to output a signal indicative of the volume of influent water received by the water softener(resin column not shown), a water hardness indicator(32) configured to output a signal indicative of a degree of hardness of the influent water, a processor(35) coupled to receive the respective signals from the water meter and the water hardness indicator, the processor being configured to compute a value indicative of the total level of hardness removed by the water softener, and a comparator(37) coupled to receive a signal indicative of the capacity of the resin in the water softener, the comparator further configured to receive the value indicative of total hardness to issue a regeneration command based on comparing the resin capacity relative to the value of total hardness(column 2 lines 57-67). Kong further teaches wherein the water hardness indicator comprises a conductivity meter configured to measure a degree of conductivity of the influent water. Kong further teaches memory for storing a functional relationship for relating the degree of conductivity measured by the conductivity meter to

a degree of hardness of the influent water. Kong further teaches a look up table(column 4 lines 11-20) for relating the degree of conductivity measured by the conductivity meter to a degree of hardness of the influent water. Kong further teaches wherein the total level of hardness removed by the water softener is calculated based on the product of the volume of influent water by the degree of hardness of the influent water. Kong further teaches wherein the comparator is configured to generate the regeneration command when the total level of hardness computed by the processor is equal to the level of resin capacity of the water softener(column 4 lines 59-65).

Claims 10-12,15,16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kong(6216092).

Kong et al teaches a method for controlling regeneration of a water softener, the method comprising measuring the volume of influent water received by the water softener, measuring a signal indicative of a degree of hardness removed by the water softener, providing the quantity of resin capacity of the water softener, and relating the quantity of resin capacity to the value of total hardness to determine whether or not regeneration is to be commanded for the water softener. Kong et al further teaches wherein the signal indicative of the degree of hardness of the influent water comprises a measurement of a degree of conductivity of the influent water. Kong et al further teaches relating the measured degree of conductivity to a degree of hardness of the influent water. Kong further teaches wherein the total level of hardness removed by the water softener is calculated based on the product of the volume of influent water by the degree of hardness of the influent water. Kong further teaches wherein the comparator

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is configured to generate the regeneration command when the total level of hardness is equal to the level of resin capacity of the water softener(column 4 lines 59-65).

Allowable Subject Matter

Claims 5-7,13,14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 5 recites "wherein the water-hardness indicator comprises an ion-selective electrode configured to measure a degree of calcium ion concentration in the influent water. Kong teaches a conductivity meter configured to measure a degree of conductivity of the influent water. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to substitute an ion selective electrode for a conductivity meter because Kong does not suggest such a modification. Claims 6 and 7 depend on claim 5 and hence would also be allowable upon incorporation of claim 5 into claim 1.

Claim 13 recites "wherein the signal indicative of the degree of hardness of the influent water comprises a measurement of calcium concentration in the influent water". Kong teaches a conductivity meter configured to measure a degree of conductivity of the influent water. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to substitute a measurement of calcium concentration in the influent water for a conductivity meter because Kong does not suggest such a

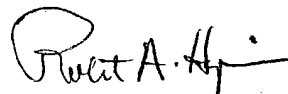
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modification. Claim 14 depends on claim 13 and hence would also be allowable upon incorporation of claim 13 into claim 10.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Friday 9:00am-4:00pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on 571-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Robert A Hopkins
Primary Examiner
Art Unit 1724

Rah
April 19, 2004